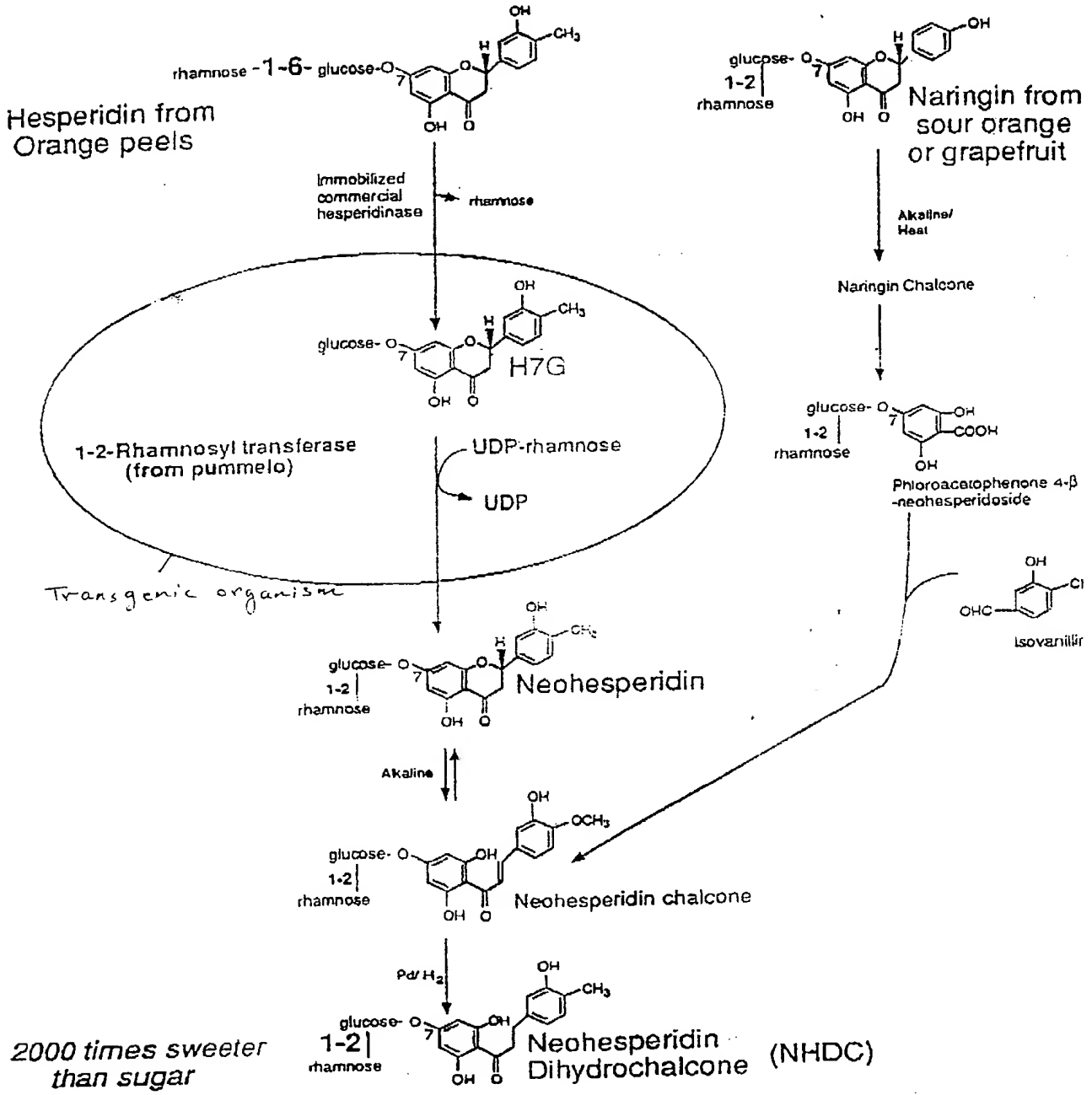
rhamnose -1-6- glucose-O
Hesperidin from Orange peels
Immobilized commercial hesperidinase
rhamnose
glucose-
H7G
1-2-Rhamnosyl transferase (from pummelo)
UDP-rhamnose
UDP
Transgenic organism
Neohesperidin
Alkaline
Neohesperidin chalcone
Pd/H2
Neohesperidin Dihydrochalcone (NHDC)
2000 times sweeter than sugar
1-2
rhamnose
glucose-
Naringin from sour orange or grapefruit
Alkaline/ Heat
Naringin Chalcone
Phloroacetophenone 4-β -neohesperidoside
Isovanillin

Fig 1

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ATGGATACCAAGCATCAAGATAAGCCAAGCATTCTCATGTTACCATGGCTAGCTCATGGG 60
 M  D  T  K  H  Q  D  K  P  S  I  L  M  L  P  W  L  A  H  G
CACATAGCTCCACACCTTGAACTTGCCAAGAAGCTTTCACAGAAAAACTTCCACATATAT 120
 H  I  A  P  H  L  E  L  A  K  K  L  S  Q  K  N  F  H  I  Y
TTCTGCTCTACTCCCAACAATCTACAATCCTTCGGCAGAAATGTTGAAAAAAACTTCTCA 180
 F  C  S  T  P  N  N  L  Q  S  F  G  R  N  V  E  K  N  F  S
TCTTCAATACAACTCATAGAACTGCAACTTCCCAATACATTCCCTGAACTTCCTTCACAA 240
 S  S  I  Q  L  I  E  L  Q  L  P  N  T  F  P  E  L  P  S  Q
AATCAGACCACAAAAAACCTTCCTCCCCATCTTATTTATACTCTCGTGGGAGCATTTGAA 300
 N  Q  T  T  K  N  L  P  P  H  L  I  Y  T  L  V  G  A  F  E
GACGCAAAACCTGCTTTTTGCAACATCTTGGAGACGCTTAAACCAACCCTTGTTATGTAT 360
 D  A  K  P  A  F  C  N  I  L  E  T  L  K  P  T  L  V  M  Y
GATTTGTTCCAACCGATGGCGGCGGAGGCAGCTTACCAGTATGACATAGCTGCTATTTTG 420
 D  L  F  Q  P  M  A  A  E  A  A  Y  Q  Y  D  I  A  A  I  L
TTCTTACCCTTATCTGCAGTAGCCTGCTCTTTCTTGCTGCACAATATCGTAAATCCCAGC 480
 F  L  P  L  S  A  V  A  C  S  F  L  L  H  N  I  V  N  P  S
CTGAAATACCCTTTCTTTGAATCTGATTACCAAGATAGAGAAAGCAAGAACATCAATTAC 540
 L  K  Y  P  F  F  E  S  D  Y  Q  D  R  E  S  K  N  I  N  Y
TTCCTGCATCTTACTGCCAATGGCACCTTAAACAAAGACAGGTTCTTAAAAGCTTTCGAA 600
 F  L  H  L  T  A  N  G  T  L  N  K  D  R  F  L  K  A  F  E
CTATCTTGCAAATTTGTGTTCATCAAAACATCAAGAGAGATTGAATCCAAGTACTTGGAT 660
 L  S  C  K  F  V  F  I  K  T  S  R  E  I  E  S  K  Y  L  D
TATTTTCCTTCTTTAATGGGAAATGAAATAATTCCAGTAGGGCCTCTAATCCAAGAACCT 720
 Y  F  P  S  L  M  G  N  E  I  I  P  V  G  P  L  I  Q  E  P
ACCTTCAAGGTAGATGATACAAAGATCATGGACTGGCTGAGCCAAAAGGAGCCTCGTTCA 780
 T  F  K  V  D  D  T  K  I  M  D  W  L  S  Q  K  E  P  R  S
GTCGTGTATGCATCCTTTGGCAGTGAGTACTTTCCTTCCACGGATGAAATACATGACATA 840
 V  V  Y  A  S  F  G  S  E  Y  F  P  S  T  D  E  I  H  D  I
GCTATTGGGTTATTGCTCACCGAGGTTAATTTTATATGGGCTTTCAGATTACATCCTGAT 900
 A  I  G  L  L  L  T  E  V  N  F  I  W  A  F  R  L  H  P  D
GAGAAAATGACGATAGAGGAAGCACTGCCTCAGGGCTTTGCTGAGGAGATTGAAAGGAAT 960
 E  K  M  T  I  E  E  A  L  P  Q  G  F  A  E  E  I  E  R  N
AATAAGGGAATGATAGTACAAGGTTGGGTTCCGCAGGCTAAAATTTTAAGGCATGGAAGC 1020
 N  K  G  M  I  V  Q  G  W  V  P  Q  A  K  I  L  R  H  G  S
ATCGGCGGATTTTTGAGTCATTGTGGTTGGGGCTCGGTGGTTGAGGGGATGGTTTTCGGG 1080
 I  G  G  F  L  S  H  C  G  W  G  S  V  V  E  G  M  V  F  G
GTACCAATCATAGGTGTGCCAATGGCATATGAGCAGCCAAGCAATGCCAAGGTGGTGGTT 1140
 V  P  I  I  G  V  P  M  A  Y  E  Q  P  S  N  A  K  V  V  V
GACAATGGTATGGGCATGGTCGTTCCAAGAGATAAGATCAATCAAAGACTTGGAGGAGAG 1200
 D  N  G  M  G  M  V  V  P  R  D  K  I  N  Q  R  L  G  G  E
GAGGTGGCGAGGGTCATTAAACATGTTGTGCTGCAAGAAGAAGCGAAGCAAATAAGAAGA 1260
 E  V  A  R  V  I  K  H  V  V  L  Q  E  E  A  K  Q  I  R  R
AAAGCTAATGAAATTAGTGAGAGTATGAAGAAGATAGGGGACGCACAGATGAGTGTGGTG 1320
 K  A  N  E  I  S  E  S  M  K  K  I  G  D  A  Q  M  S  V  V
GTGGAGAAACTGCTGCAGCTTGTCAAGAAATCTGAATAA 1359
 V  E  K  L  L  Q  L  V  K  K  S  E  *
```

Fig. 2